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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/589,976

08/18/2006

Manabu Yagi

ASA-5487

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24956 7590 04/27/2009  
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EXAMINER

WONGWIAN, PHUTTHIWAT

ART UNIT

PAPER NUMBER

3741

MAIL DATE

DELIVERY MODE

04/27/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/589,976	<b>Applicant(s)</b> YAGI ET AL.	
	<b>Examiner</b> PHUTTHIWAT WONGWIAN	<b>Art Unit</b> 3741	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3,5,6,9-12,14,15 and 18-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5,6,9-12,14,15 and 18-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 August 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Amendment*

1. This office action is responsive the amendment filed on 01/23/2009. Claims 4, 7-8, 13 and 16-17 have been cancelled, thus claims 1-3, 5-6, 9-12, 14-15 and 18-20 are currently pending in this application.

### *Response to Arguments*

2. Applicant's arguments with respect to claims 1-3, 5-6, 9-12, 14-15 and 18-20 have been considered but are moot in view of the new ground(s) of rejection.

### *Drawings*

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the subject matter of claims 1, 10 and 19, "a combustor outer cylinder mounted **outside** the outer casing" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure

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is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

4. The amendment filed 01/23/2009 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: The limitation "a combustor outer cylinder mounted **outside** the outer casing" was not described in the original drawing or specification.

Applicant is required to cancel the new matter in the reply to this Office Action.

### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1, 10 and 19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The limitation "a combustor outer cylinder mounted **outside** the outer casing" was not described in the original drawing or specification, the drawing (Fig. 1, A) shows that the combustor outer cylinder 8 is **mounted to the casing 7**, not the outer casing.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-3, 5-6, 9-12, 14-15 and 18-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. Claim 1 recites the limitation "the casing, the outside" in lines 10 and 11. There is insufficient antecedent basis for this limitation in the claim.

10. Claim 10 recites the limitation "the outside, the scroll" in lines 5 and 8. There is insufficient antecedent basis for this limitation in the claim.

11. As to claim 10, the limitation "a radial turbine compeller" should be changed to "a radial turbine impeller".

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12. Claim 11 recites the limitation "the casing, the shell". There is insufficient antecedent basis for this limitation in the claim.

13. As to claim 19, the limitation, "guiding a combustion gas from a combustor liner mounted inside of a combustor outer cylinder mounted inside an outer casing" does not make grammatical sense.

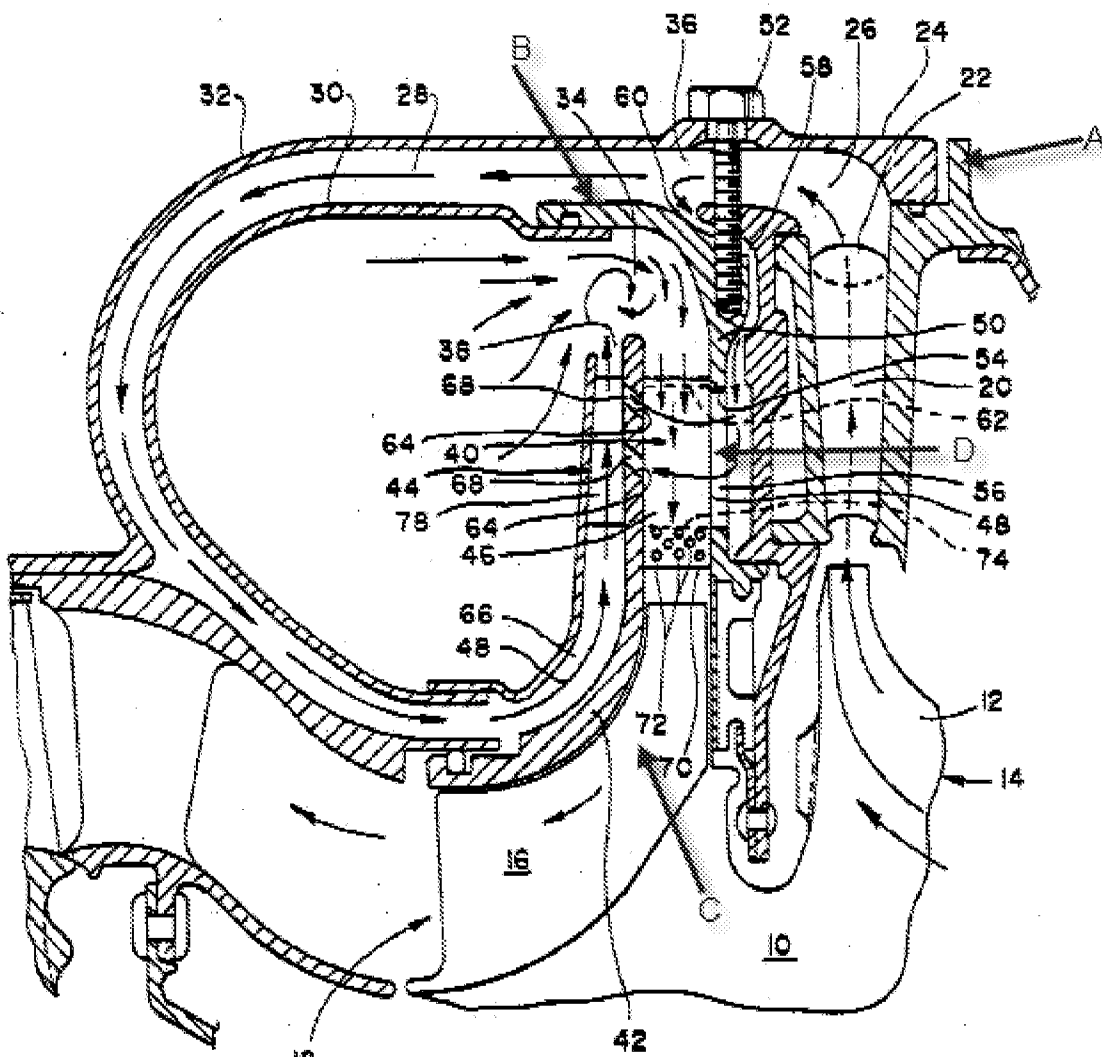
***Claim Rejections - 35 USC § 102***

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15. Claims 1-3, 5, 9-12, 14 and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Corrado (US Patent No. 5,280,703).



16. As to claims 1, 10 and 19-20, Corrado discloses a radial turbine (fig. 1) comprising: an outer casing A (fig. 1, above); a scroll B (fig. 1 above) mounted inside the outer casing which forms a first part 34 (fig. 1) of a combustion gas flow path for guiding a combustion gas generated in a combustor (fig. 1) to a nozzle 40 (fig. 1) which injects the combustion gas to a radial impeller 16 (fig. 1) on an inner side in a radial direction of a rotary shaft (fig. 1); and a shell 42 (fig. 1) which covers the nozzle and the

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impeller and forms a second part C (fig. 1 above) of the combustion gas flow path; an airtight air flow path 22 (fig. 1) formed between outside air in a substantially airtight state inside the casing; an air take-in hole 12 (fig. 1) which takes in air into the air flow path from the outside 14 (fig. 1); a combustor outer cylinder 24 (fig. 1 above) mounted outside the outer casing A (fig. 1 above); a combustor liner 30 (fig. 1) mounted inside the combustor outer cylinder 24 (fig. 1), which is communicated with the scroll B (fig. 1 above) and guides the combustion gas into the scroll; a blow-off hole 38 (fig. 1) which guides a first part of the air taken into the air flow path, into the combustor liner; and through holes D, 68 (fig. 1 above) extending through the shell from the air flow path on both sides of the nozzle adjacent a front edge of the nozzle and inclined at an angle 68 (fig. 1) toward a direction of flow of the combustion gas to inject a second part of the air taken into the air flow path into the combustion gas passing through the nozzle.

17. As to claims 2-3 and 11, Corrado discloses that the air flow path is formed to cover an outer side 22, 28 (fig. 1) of the combustion gas flow path communicating from the combustor to the shell, and the through-holes D, 68 (fig. 1 above) is formed in walls of the shell 42 (fig. 1) at a portion upstream of the nozzle.

18. As to claims 5 and 14, Corrado discloses a plurality of the through-holes D, 68 (fig. 1 above) are arranged in parallel along a direction of flow of the combustion gas flow path.

19. As to claims 9 and 18, Corrado discloses a through-hole D, 68 (fig. 1) which leads from one side of the air flow path sandwiching the combustion gas flow path to the other side of the air flow path while penetrating a wall 42 (fig. 1) of the shell, a blade



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thick 46 (fig. 1) portion of the nozzle and a wall of the shell on the other side; and a leakage hole 72 (fig. 1) which leads from the blade thick portion of the nozzle of the through-hole to a surface of the nozzle.

20. As to claim 12, Corrado discloses the air flow path 22, 28 (fig. 1) is formed to cover an outer side of the combustion gas flow path communicating from the combustor to the shell 42 (fig. 1), and the through-holes D, 68 (fig. 1 above) are formed in the walls of the shell at a portion upstream of the nozzle.

### ***Claim Rejections - 35 USC § 103***

21. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

22. Claims 6 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Corrado in view of Noe (Pub. No. 20030031555).

23. As to claims 6 and 15, Corrado discloses the essential features of the claimed invention except *the nozzle includes a circular blade cascade in which a number of blades are arranged in a row in the circumference of which center is a turbine rotary shaft and each through-hole includes a plurality of shell through-holes along a surface of each blade of the circular blade cascade wherein the shell through holes tilting in a flowing direction of the combustion gas flow path and penetrates a wall of the circular blade cascade.*

However, Noe teaches the nozzle includes a circular blade cascade 14 (fig. 1) in which a number of blades (fig. 1) are arranged in a row in the circumference of which center is a turbine rotary shaft (fig. 1) and each through-hole 22, 22B (fig. 3) includes a plurality of shell through-holes 22, 22B (fig. 3) along a surface of each blade (fig. 3) of the circular blade cascade wherein the shell through holes tilting 34 (fig. 3) in a flowing direction of the combustion gas flow path and penetrates a wall of the blade 34 (fig. 4).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Corrado's invention to include *the nozzle includes a circular blade cascade in which a number of blades are arranged in a row in the circumference of which center is a turbine rotary shaft and each through-hole includes a plurality of shell through-holes along a surface of each blade of the circular blade cascade wherein the shell through holes tilting in a flowing direction of the combustion gas flow path and penetrates a wall of the circular blade cascade*, as suggested and taught by Noe, for the purpose of providing more effective cooling for the turbine nozzle, thereby, improving the efficiency of the engines.

### **Conclusion**

24. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PHUTTHIWAT WONGWIAN whose telephone number is 571-270-5426. The examiner can normally be reached on Monday - Thursday, 7:30am - 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MICHAEL A. CUFF can be reached on 571-272-6778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic

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Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. W./

Examiner, Art Unit 3741

/Michael Cuff/

Supervisory Patent Examiner, Art Unit 3741